

CLAIMS

1. An electric supply system for the door of refrigerators and freezers and other appliances comprising a cabinet (10) to which is articulated an end edge (21) of a door (20) carrying an electronic control means (30), characterized in that it comprises a connecting means (15) mounted to each region of the cabinet (10) which is foreseen to receive and affix a respective hinge (40) provided with a tubular hinge pin (42); an auxiliary electric wiring (16) connecting the connecting means with an internal electric circuit of the appliance; a duct (22) provided in the door (20) and having an inlet (22a) opened to the interior of the door (20) and an outlet opened (22b) to the outside of the end edge (21) of the door (20), in a coaxial position in relation to that foreseen for mounting the hinge pin (42) of a respective hinge (40), as a function of the opening directions foreseen for the door (20); a tubular bushing (45) provided at the outlet (22b) of the duct (22) for receiving and bearing the hinge pin (42) of the hinge (40); an electric wiring (31) mounted through the duct (22), from its inlet (22a) to its outlet (22b) and through the hinge pin (42) of the hinge (40), in order to have an internal end (32) connected with the electronic control means (30) and an external end (33) electrically coupled to the connecting means (15) adjacent to the hinge (40).
2. The electric supply system as set forth in claim 1, characterized in that the connecting means (15) is mounted inside a respective housing (12) provided on the face of the cabinet (10) to which the hinge (40) is affixed.
3. The electric supply system as set forth in claim 2, characterized in that there are provided two housings

(12), each located close to a respective side of the cabinet (10) and housing a connecting means (15) connected to the auxiliary electric wiring (16).

4. The electric supply system as set forth in claim 1,  
5 characterized in that the duct (22) takes the form of a groove defined in the end edge (21) of the door (20) with which the hinge (40) cooperates, the inlet (22a) being defined at the bottom of the median region of the groove presenting widened opposite ends defining a  
10 pair of outlets (22b).
5. The electric supply system as set forth in claim 4,  
characterized in that the duct (22) in the form of a groove has its depth enlarged at its opposite end regions so as to lodge an orthogonal bending of the  
15 electric wiring (31).
6. The electric supply system as set forth in claim 4,  
characterized in that the end edge (21) of the door (20) is defined by a finishing end cap incorporating the duct (22) in the form of a groove.
- 20 7. The electric supply system as set forth in claim 4,  
characterized in that the duct (22) in the form of a groove is closed by an elongated cap (25) removably fitted into said duct (22).
8. The electric supply system as set forth in claim 7,  
25 characterized in that the widened end of the duct (22) opposite to that adjacent to the hinge (40) receives a small finishing cap (58) removably fitted therein.
9. The electric supply system as set forth in claim 1,  
characterized in that the hinge (40) comprises a basic  
30 plate (41) to be removably affixed to the cabinet (10), projecting outwardly from the contour of the latter so as to incorporate therein a tubular hinge pin (42), to be rotatably supported in the interior of the adjacent outlet (22b) of the duct (22).
- 35 10. The electric supply system as set forth in claim

9, characterized in that the hinge pin (42) of the hinge (40) is rotatably supported inside a tubular bushing (45) that is fitted and retained inside the adjacent outlet (22b) of the duct (22).

5 11. The electric supply system as set forth in claim 10, characterized in that the tubular bushing (45) incorporates an end flange (46) to be seated onto the end edge (21) of the door (20).

10 12. The electric supply system as set forth in claim 11, characterized in that the tubular bushing (45) incorporates locking tabs (46a) in its end flange (46), elastically deformable in the radial direction so as to be fitted and retained in respective housings (23) provided external to the outlets (22b) of the  
15 duct (22).

13. The electric supply system as set forth in claim 9, characterized in that it comprises a finishing main cover (50) which is removably fitted over the hinge (40), in order to cover the basic plate (41) of the  
20 latter and the adjacent housing (12) and outlet (22b) of the duct (22).

14. The electric supply system as set forth in claim 13, characterized in that it further comprises an auxiliary cover (55), removably fitted in the housing  
25 (12) away from the hinge (40) and which covers said housing (12) and the adjacent bores (18) of the cabinet (10), for mounting said door (20) upon the reversion of its opening direction.